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BUREAU OF MINES MINERALS YEARBOOK

The Mineral Industry of Alabama

UNITED STATES DEPARTMENT OF THE INTERIOR

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UNITED STATES DEPARTMENT OF THE INTERIOR • Manuel J. Lujan, Jr., Secretary

BUREAU OF MINES • T S Ary, Director

This publication is a chapter from the current Bureau of Mines Minerals Yearbook, comprising *Volume I, Metals and Minerals; Volume II, Area Reports: Domestic; Volume III, Area Reports: International.* The separate volumes of the Yearbook are sold by the Superintendent of Documents, Washington, D.C. 20402.

The Mineral Industry of Alabama

This chapter has been prepared under a Memorandum of Understanding between the Bureau of Mines, U.S. Department of the Interior, and the Geological Survey of Alabama for collecting information on all nonfuel minerals.

By James R. Boyle[1] and Ernest A. Mancini[2]

The value of Alabama's nonfuel mineral production in 1987 was $446.6 million, an increase over that of 1986 and the first increase in 3 years. Alabama was second in the Nation in production of bauxite and ferroalloys; third in bentonite, crushed dolomite, crushed marble, and fire clay; and fourth in masonry cement.

Trends and Developments.—Employment in the minerals industry remained relatively low for the second year even though the overall unemployment rate dropped to 7.9% by December. Employment in mining and primary metals dropped about 10% and 2%, respectively.

Table 1.—Nonfuel mineral production in Alabama[1]

Mineral	1985		1986		1987	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement:						
Masonry thousand short tons	268	$18,113	267	$18,165	291	$17,626
Portland do.	3,721	165,972	3,477	153,629	3,600	160,878
Clays[2] do.	1,873	13,139	2,077	14,828	2,239	16,217
Gem stones	NA	e1	NA	1	NA	7
Lime thousand short tons	1,216	52,295	1,180	50,377	1,232	52,200
Sand and gravel:						
Construction do.	e11,000	e32,000	10,781	30,807	e10,300	e35,600
Industrial do.	524	4,533	433	3,388	580	5,025
Stone:						
Crushed do.	25,853	109,176	e24,000	e120,500	30,018	146,247
Dimension do.	10	2,661	e8	e968	W	W
Combined value of bauxite, clays (bentonite), salt, and value indicated by symbol W	XX	8,719	XX	12,553	XX	12,843
Total	XX	406,609	XX	405,216	XX	446,643

eEstimated. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" figure. XX Not applicable.

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

[2]Excludes certain clays; kind and value included with "Combined value" data.

Table 2.—Nonfuel minerals produced in Alabama in 1986, by county[1]

County	Minerals produced in order of value
Autauga	Sand and gravel (construction).
Baldwin	Clays.
Barbour	Clays, bauxite, sand and gravel (construction).
Bibb	Clays.
Blount	Cement, sand and gravel (construction).
Calhoun	Clays, sand and gravel (construction).
Chilton	Sand and gravel (construction), clays.
Clarke	Sand and gravel (construction).
Coffee	Do.
Conecuh	Do.
Dale	Do.
Dallas	Sand and gravel (construction), clays.
Elmore	Do.
Escambia	Sand and gravel (construction).
Etowah	Do.
Franklin	Do.
Geneva	Do.
Hale	Do.
Henry	Bauxite.
Jefferson	Cement, clays.
Lowndes	Clays, sand and gravel (construction).
Macon	Sand and gravel (construction), sand and gravel (industrial).
Madison	Sand and gravel (construction), clays.
Marengo	Cement.
Marion	Sand and gravel (construction).
Marshall	Clays.
Mobile	Cement, sand and gravel (construction), sand and gravel (industrial).
Montgomery	Sand and gravel (construction), sand and gravel (industrial), clays.
Russell	Clays, sand and gravel (construction).
St. Clair	Cement, clays.
Shelby	Lime, cement, clays.
Sumter	Clays, sand and gravel (construction).
Tuscaloosa	Sand and gravel (construction), sand and gravel (industrial).
Walker	Clays.
Washington	Salt, sand and gravel (construction).
Undistributed[2]	Stone (crushed and dimension), gem stones.

[1]No production of nonfuel mineral commodities was reported for counties not listed.
[2]Data not available by county for minerals listed.

The Tennessee-Tombigbee Waterway handled over 4 million short tons of cargo in 1987, mainly mineral commodities. Crushed stone was the top cargo with over 800,000 tons. Stone was being shipped from North Alabama and from out of State to storage yards along the waterway and to various coastal markets.

The Port of Mobile handled 29.4 million short tons of cargo in 1987 compared with 38.7 million tons in 1986. Mineral commodities handled at the Alabama State Docks included exports of coal (7.1 million tons) and imports of iron ore (1.1 million tons), ilmenite and rutile (165,000 tons), potash (100,000 tons), gypsum (85,000 tons), and manganese (35,000 tons). Construction commodities imported through industry docks included sand and gravel (650,000 tons), shell (380,000 tons), and crushed stone (130,000 tons). Other general port tonnage imported included coal (4.0 million tons) and cement clinker (600,000 tons).

The first phase of the Mobile Ship Channel deepening to 45 feet began at midyear. This phase of the project will deepen the channel from the McDuffie Coal Terminal to the gulf, slightly more than 30 miles.

The Department of Industrial Relations reported that coal production for fiscal year 1987 decreased to 24.6 million short tons. Of the coal operations, 15 were underground and 101 were surface mines; nearly 14 million tons was produced from underground mines. Each of seven mines produced in excess of 1 million tons; all were underground.

The Alabama Development Office (ADO) announced that capital investments in new and expanding industries increased from $1.3 billion in 1986 to $2.4 billion in 1987. In the mineral-related sector, mining and quarrying of industrial minerals had 1 new operation and 8 expansions totaling $5.7 million; stone, clay, glass, and concrete products had 3 new operations and 37 expansions totaling $34.4 million; and primary metals had 3 new operations and 46 expansions totaling $224.9 million. ADO also reported four companies utilized industrial revenue bonds totaling $13.4 million for expansion of their operations.

Legislation and Government Programs.—The Secretary of the Interior approved a grant of $123,000 in Federal coal mine reclamation funds for the State of

Alabama to be used to reclaim six iron ore mines in the Birmingham area. The Office of Surface Mining will assist the State Department of Industrial Relations in closing and reclaiming these abandoned mines.

The State Lands Division of the Department of Conservation and Natural Resources manages State lands not being used for specific purposes. In fiscal year 1987, royalty receipts totaled $2.7 million, down from $3.0 million in fiscal year 1986. The sources of the receipts were $1.7 million from oil and gas, $682,000 from coal, and $197,000 from sand and gravel. The balance was from permits, various fees, and easements.

The Bureau of Mines Tuscaloosa Research Center conducted research on improved ceramic materials, dewatering of waste streams, fine grinding of various minerals, and other beneficiation studies. In addition, the Bureau conducted research on mining safety and health directly related to the State's coal industry.

REVIEW BY NONFUEL MINERAL COMMODITIES

INDUSTRIAL MINERALS

Industrial minerals accounted for the bulk of the value of Alabama's total nonfuel mineral production. Although operating at reduced levels, the industry optimistically continued expansion and development.

Cement.—Masonry and portland cements accounted for about 40% of the value of nonfuel minerals produced in Alabama. Alabama ranked fourth nationally in the production of masonry cement and sixth in portland cement. Output of both types of cement increased slightly over that of 1986.

Portland cement was produced at six plants: two in Jefferson County and one each in Marengo, Mobile, St. Clair, and Shelby Counties. Five plants used the dry process while one used the wet process; eight kilns were available. Seven plants produced masonry cement, with Cheney Lime & Cement Co. being one of two plants nationally that produced only masonry cement. Of the six operating companies, five were owned by foreign interests. Expansion and modernization projects at cement plants announced by ADO totaled in excess of $10 million. Improvements were also made by Blue Circle and Citadel Cement Corp.

Ideal Basic Industries Inc. announced plans to reopen its Mobile plant by late 1988 basically because the fall in the value of the dollar made its products more competitive. The 1.5-million-short-ton-per-year plant has been idle since 1984. Ideal will spend $3.1 million to modify the raw-material-processing and fuel-firing sections of the plant. For the first year, production will be geared at two-thirds of capacity. Ideal's Dominican Republic quarry will furnish stone until a source of domestic stone from West Florida can be developed.

Clays.—Common clay, fire clay, bentonite, and kaolin were produced in Alabama with total output and value increasing over that of 1986. Clays ranked fifth in mineral value in the State in 1987 as 21 companies mined clay at 31 pits in 18 counties. Alabama ranked third in the Nation in output of bentonite and fire clay and sixth in kaolin.

ADO reported three expansions in the clay industry, two in brick plants and one in a ceramic tile plant. Total expenditure was $275,000.

Common clay was mined by 18 companies at 18 pits in 14 counties. Leading counties were Jefferson, Shelby, and Sumter. Output increased; major uses were brick, cement, and concrete block.

CRH PLC, a company based in Dublin, Ireland, acquired Big River Industries Inc. for $22 million. Livlite Corp., a division of Big River, operates a 1.2-million-cubic-yard lightweight aggregate facility at Livingston. CRH plans to increase capacity of the Livlite plant by 50%. Livlite applied for a permit to use waste-derived fuels for its kilns, supplementing the coal now used.

Fire clay output and value increased over that of 1986. Fire clay was mined by four companies at five pits in Calhoun, St. Clair, and Shelby Counties.

Bentonite was mined by American Colloid Co. at its facilities in Lowndes County for use in drilling mud and the foundry industry; output and value increased.

Kaolin was mined by three companies at seven pits in Barbour and Henry Counties. Production and value increased. Major uses were in firebrick and other refractories. Kaolin occurred in association with bauxite, which was also used for refractory purposes. Mining companies continued to operate at reduced levels during 1987.

Lime.—Alabama ranked fifth in the Nation in production of lime, which was the third most valuable commodity produced in the State in 1987. Four companies produced lime in five plants in Shelby County. Output of hydrated lime and quicklime increased.

Table 3.—Alabama: Lime sold or used by producers, by use

Use	1986		1987	
	Quantity (short tons)	Value (thousands)	Quantity (short tons)	Value (thousands)
Paper and pulp	353,523	$14,865	365,256	$15,232
Water purification	193,744	8,395	212,251	8,959
Sewage treatment	W	W	64,986	2,950
Road and soil stabilization	25,296	1,107	W	W
Other[1]	607,678	26,010	589,255	25,059
Total	1,180,241	50,377	1,231,748	52,200

W Withheld to avoid disclosing company proprietary data; included with "Other."
[1]Includes acid water neutralization, agriculture, alkalies, aluminum and bauxite, animal and human food, basic oxygen steel, electric steel, finishing lime, magnesia from seawater or brine (1986), mason's lime, oil well drilling (1986), open-hearth steel ore concentration, other chemical and industrial, other construction, other metallurgy, paint, petroleum refining, soil stabilization, sugar refining, wire drawing, and data indicated by symbol W.

Salt.—Alabama ranked eighth nationally in output of salt. Olin Corp. produced salt from brine wells by solution mining a near-surface salt dome in Washington County. Production increased but unit values decreased from those of 1986. Alabama Electric Cooperative announced plans to spend $14.9 million to develop the Nation's first compressed-air energy storage plant at a large salt dome. The facility will have a 26-hour running capacity and was scheduled for operation by 1989. The 40-acre site is owned by Olin, who will use the brine from the dome in its manufacturing process.

Sand and Gravel.—Alabama produced both construction and industrial sand and gravel in 1987. Total sand and gravel production was estimated to have decreased while value increased, indicating an increase in unit values.

Construction.—Construction sand and gravel production is surveyed by the U.S. Bureau of Mines for even-numbered years only. This chapter contains estimates for 1985 and 1987 and actual data for 1986. Data for odd-numbered years are based on annual company estimates.

Construction sand and gravel ranked fourth in terms of mineral value in Alabama in 1987 with output decreasing; unit values increased. Most operations were relatively small with no individual pit producing over 1 million short tons. ADO reported two expansions in the industry totaling $1.2 million. Companies involved in expansion were Donnell Sand Co., Daleville, and Southern Silica Inc., Elmore. Friese Materials Corp., a sand and gravel producer, installed a washing and dewatering bucket wheel at its Atmore plant.

Industrial.—Seven companies produced industrial sand and gravel with output increasing. Industrial sand and gravel was used primarily by foundries for molds and cores. All operations were relatively small with individual output under 200,000 short tons per year. U.S. Silica Co., Berkeley Springs, WV, purchased Warrior Sand Co. of Hurtsboro. Warrior produces a high purity silica sand for use in the foundry industry.

Slag—Iron and Steel.—Jim Walter Resources Inc., Birmingham, and Vulcan Materials Co., Fairfield and Gadsden, air-cooled slag from blast furnaces, which was used as road base, railroad ballast, and asphaltic concrete aggregate. Vulcan sold steel slag for similar uses. Output of both remained the same as that in 1986.

Stone.—Stone production is surveyed by the U.S. Bureau of Mines for odd-numbered years only. This chapter contains actual data for 1985 and 1987 and estimates for 1986. Data for even-numbered years are based on annual company estimates.

Crushed.—Crushed stone ranked second in mineral value in Alabama with output increasing over that of 1986. Mined material included dolomite, granite, limestone, and marble. Alabama was third in the Nation in production of crushed dolomite and crushed marble. Crushed stone was produced by 28 companies at 47 operations in 20 counties. Principal production was from Shelby, Jefferson, and Madison Counties. Crushed stone was used primarily in cement manufacture, as concrete aggregate, and as a road base. Eleven companies produced in excess of 1 million short tons per year and accounted for 81% of all crushed stone. Transportation was mainly by truck.

E.C.C. America Inc. acquired Moretti-Harrah Marble Co.'s Sylacauga Calcium Products Div. for $25 million. The facility has a capacity of 200,000 short tons per year of calcium carbonate that was used by paint and polymer manufacturers. Southern Ready-Mix Inc., Birmingham, announced a $7.5 million expansion. Plans include reactivating a stone quarry in Tarrant and construction of a new concrete pipe plant. Vulcan Materials Co., Birmingham, and Mexico's Grupo ICA formed a joint venture to supply construction aggre-

gates to gulf coast markets. A large quarry in the Yucatán Peninsula of Mexico, capable of producing 6 million short tons per year, will ship the material to major ports along the gulf. Hoover Inc. opened its new 1.2-million-short-ton-per-year quarry in Huntsville early in the year.

In 1985, the U.S. Bureau of Mines began compiling crushed stone statistics by districts for some States. Table 5 presents end-use data for crushed stone produced in the three Alabama districts depicted in figure 1.

Table 4.—Alabama: Crushed stone[1] sold or used by producers in 1987, by use

(Thousand short tons and thousand dollars)

Use	Quantity	Value
Concrete aggregate (+ 1-1/2 inch): Riprap and jetty stone	829	3,351
Coarse aggregate, graded:		
Concrete aggregate, coarse	4,244	18,261
Bituminous aggregate, coarse	1,747	7,145
Bituminous surface-treatment aggregate	1,814	5,397
Fine aggregate (-3/8 inch):		
Stone sand, concrete	860	3,369
Stone sand, bituminous mix or seal	1,067	4,311
Screening, undesignated	282	892
Coarse and fine aggregates:		
Graded road base or subbase	2,623	9,832
Unpaved road surfacing	274	975
Terrazzo and exposed aggregate	533	2,416
Crusher run or fill or waste	3,145	12,291
Other construction materials[2]	531	2,092
Agricultural: Agricultural limestone	728	4,615
Chemical and metallurgical:		
Cement manufacture	3,795	11,088
Lime manufacture	1,535	5,742
Flux stone	167	827
Special:		
Other fillers and extenders	555	16,773
Other miscellaneous[3]	290	5,508
Other unspecified[4]	4,999	31,362
Total	30,018	146,247

[1]Includes limestone, dolomite, granite and marble.
[2]Includes filter stone and railroad ballast.
[3]Includes poultry grit and mineral food, other agricultural uses, asphalt fillers or extenders, mine dusting and acid water treatment, and whiting or whiting substitute.
[4]Includes production reported without a breakdown by end use and estimates for nonrespondents.

Table 5.—Alabama: Crushed stone sold or used by producers in 1987, by use and district

(Thousand short tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Coarse aggregate (+ 1-1/2 inch)[1]	392	1,106	440	2,257	--	--
Coarse aggregate, graded[2]	W	W	4,824	18,577	(3)	(3)
Fine aggregate (-3/8 inch)[4]	W	W	W	W	--	--
Coarse and fine aggregates[5]	3,239	12,260	3,337	13,254	--	--
Other construction	3,240	12,734	1,645	6,395	--	--
Agricultural[6]	(3)	(3)	322	1,967	(3)	(3)
Chemical and metallurgical[7]	--	--	5,497	17,657	--	--
Special[8]	--	--	784	21,913	--	--
Other unspecified[9]	892	3,572	1,971	15,489	3,525	19,066
Total	7,673	29,672	18,820	[10]97,508	3,525	19,066

W Withheld to avoid disclosing company proprietary data; included with "Other construction."
[1]Includes riprap and jetty stone and filter stone.
[2]Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, and railroad ballast.
[3]Withheld to avoid disclosing company proprietary data; included with "Other unspecified."
[4]Includes stone sand (concrete), stone sand (bituminous mix or seal), and fine aggregate (screen).
[5]Includes graded road base or subbase, unpaved road surfacing, terrazzo and exposed aggregate, and crusher run or fill or waste.
[6]Includes agricultural limestone, poultry grit and mineral food, and other agricultural uses.
[7]Includes cement manufacture, lime manufacture, and flux stone.
[8]Includes mine dusting, asphalt filler, whiting or whiting substitute, and other fillers or extenders.
[9]Includes production reported without a breakdown by end use and estimates for nonrespondents.
[10]Data do not add to total shown because of independent rounding.

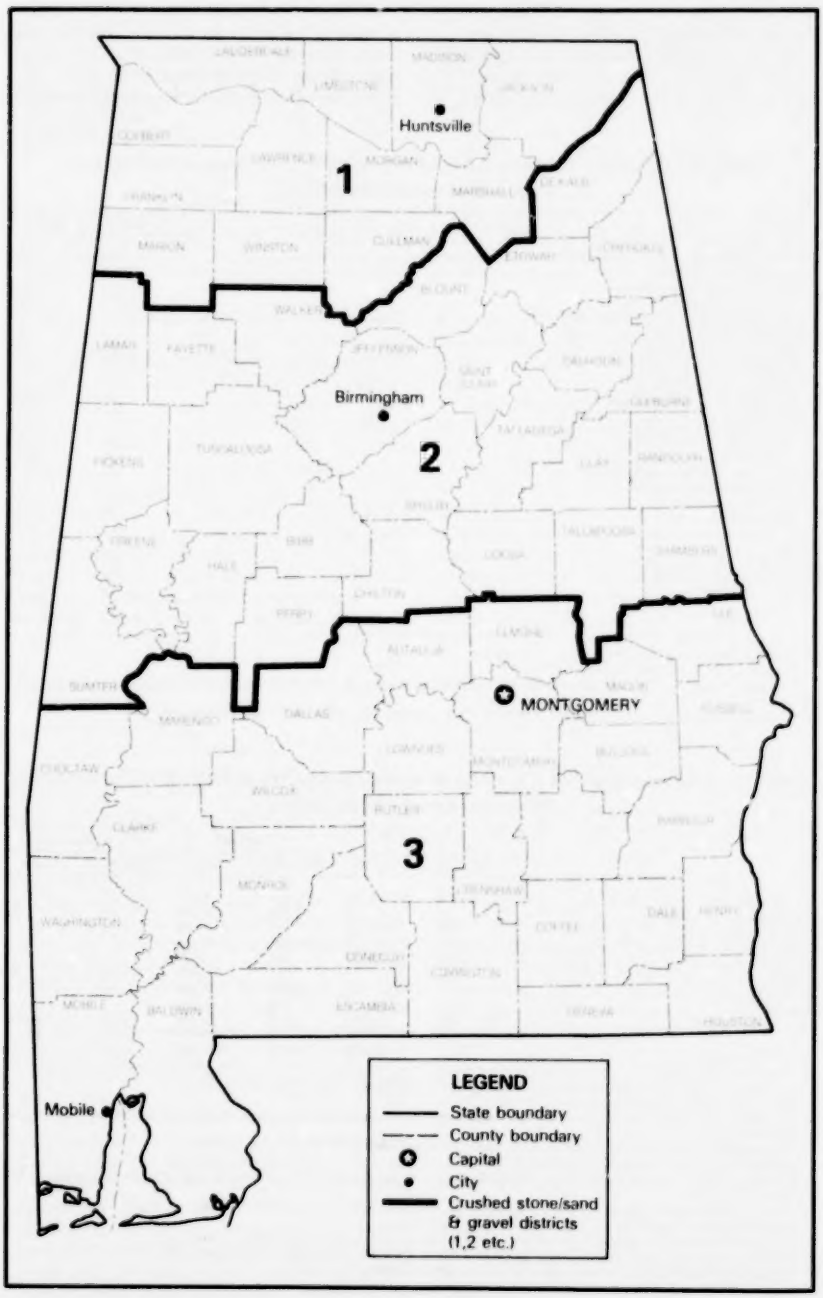

Figure 1.—Aggregate-producing districts in Alabama.

Dimension.—Output of dimension stone decreased 12.6% from that of 1986; unit values increased. Marble was quarried in Talladega County, limestone from an underground mine in Franklin County, and sandstone in Blount County.

Sulfur (Recovered).—Alabama ranked sixth nationally in output of recovered sulfur. Three companies recovered sulfur from natural-gas-processing plants in Escambia, Mobile, and Washington Counties. Two other companies recovered sulfur from petroleum refineries in Mobile and Tuscaloosa Counties. Exxon Co., Hunt Oil Co., Phillips Petroleum Co., and Unocal Oil Co. sold 319,000 metric tons of sulfur valued at $30.6 million, a decrease in output and value. Exxon Co. applied for an air-quality permit to construct a natural-gas-processing facility in Mobile County. The facility was scheduled to start construction in 1988 and produce a byproduct of 450 long tons of sulfur per day.

Talc.—Cyprus Industrial Minerals Co. ground talc for use in cosmetics and pharmaceuticals at its operations near Alpine. Ore was obtained locally and from Montana. Cyprus started development of its Winterboro Mine in June and was expected to reach its capacity in 1988. ADO announced expansions at the Cyprus facility totaling $1 million.

Other Industrial Minerals.—Norton Co., Huntsville, manufactured artificial abrasives at its facility in Madison County; abrasive-grade, high-purity fused aluminum oxide and aluminum zirconium oxide were produced. ADO reported Norton underwent a $400,000 expansion during the year. International Minerals & Chemical Corp. operated a fluosilicic acid plant at Florence. 3 M Corp.'s Specialty Chemicals Div. operated a plant at Decatur that produced a fluoroelastomer used in nonmetallic ducting-system expansion joints. Tennessee Valley Authority and U.S.S. Agri-Chemical Inc. produced anhydrous ammonia at plants at Muscle Shoals and Cherokee, respectively. Annual capacity for the two plants was 249,000 short tons. W. R. Grace & Co., Birmingham, and Armstrong World Industries, Mobile, expanded perlite from ore shipped from the Western United States. Production and value increased over that of 1986. Expanded perlite was used for horticultural purposes and concrete aggregate. W. R. Grace, Irondale, exfoliated vermiculite from ore shipped into Alabama. Major uses were in concrete aggregate, block insulation, loose fill insulation, and as a soil conditioner.

METALS

Primary metal production, once one of the most important industries in the State, has declined over the last decade, with employment dropping 2% in 1987. The primary metals industry in the State consisted of aluminum, ferroalloys, and steel production facilities and various foundries throughout the State.

Aluminum.—Two companies, Revere Copper & Brass Inc., Scottsboro, and Reynolds Metals Co., Sheffield, have facilities for producing aluminum but no production was reported. Reynolds continued to operate the Southern Reclamation Co., which recovered aluminum from scrap cans, and an alloy plant that produced metallic feedstock for aluminum cans. ADO reported expansions by Reynolds at its secondary aluminum and aluminum sheet facility totaling nearly $50 million. Additionally, Southern Reclamation expended $125 million upgrading its facilities. U.S. Die Casting & Development Co. upgraded its aluminum-casting facilities at Sheffield at a cost of $1.6 million.

Kaiser Aluminum & Chemical Corp. closed its 23-year-old wire and cable plant in Bay Minette. A negotiated settlement in 1984, which included a reduction in wages and benefits, guaranteed the plant would remain open 2 years. The closure idled 93 employees.

Bauxite.—Alabama was one of three States producing bauxite. Two companies mined bauxite from pits in Barbour and Henry Counties for use in refractories. Production and value decreased from that of 1986. A. P. Green Refractories was closed throughout the year and sold its reserves to C-E Minerals Inc.

Ferroalloys.—Alabama ranked second nationally in shipments of ferroalloys. Products included ferrosilicon and silicon metal. Moore McCormack Resources Inc. completed the sale of Globe Metallurgical Inc., a silicon and ferrosilicon producer, to a management group backed by Lee Capital Corp., an investment banking firm based in Boston, MA. Globe planned to continue producing silicon metal. ADO reported that Ohio Ferro-Alloys Corp. underwent an expansion program costing $775,000.

Iron Ore.—The Alabama Department of Industrial Relations reported that Pickett

Machine & Welding Co., Russellville, mined nearly 12,000 short tons of iron ore from the Pickett pit in Franklin County.

Iron and Steel.—Gulf States Steel Corp., Gadsden, and USX Corp., Fairfield, were the only integrated steel-producing companies in the State. Minimills operating included Birmingham Steel Corp., Commercial Metals Co., and SMI Steel Inc. Demand for minimill products remained strong.

Birmingham Steel Corp. purchased minimills in Seattle, WA, and Emeryville, CA, for a total of $37 million. The company completed work on a $3 million finishing mill with plans to install new rolling mill stands by early 1988. Output of Birmingham Steel plants exceed 1 million short tons per year.

CBI Services closed its plate steel fabrication plant in Birmingham early in the year due to decreased demand. The company will consolidate its operations at its facility in Cordova.

Commercial Metals Co., Birmingham, completed an $11 million expansion with the addition of a new rolling mill. Plant capacity was increased from 250,000 short tons per year to 300,000 tons per year.

Gulf States Steel continued a $10 million program to improve facilities at Gadsden. Plans call for a new coil box for the hot-strip mill and computer controls for the hot-strip mill, plate mill, and galvanizing line. The company's problem was that the hot end of the facility could not produce enough steel for the finishing end. Imports of semifinished slabs were required to maintain output.

USX operated at less than capacity during the year. The labor walkout that started mid-1986 ended early in 1987. USX started construction of its second continuous slab caster, which will have a capacity of 1.5 million short tons per year and is scheduled for completion by late 1988. The $200 million project includes modernization of Fairfield's hot-strip mill, enabling production of three major product lines: slab, pipe, and flat rolled products. The caster can produce 104-inch-wide slabs, mainly for Tuscaloosa Steel Corp.'s new rolling mill, as well as narrower slabs for Fairfield's strip mill. USX's rolling mills at Fairfield have more capacity at its hot end than at its finishing end. Tuscaloosa Steel will eventually receive 400,000 short tons of slab per year to supplement about 275,000 tons it now receives from overseas. ADO reported expansions at Tuscaloosa Steel amounting to nearly $10 million.

Other Metals.—Manganese and chromite were ground by Prince Manufacturing Co., Phenix City, formerly N. K. Industries Inc. The product was used mainly for brick colorization. ADO reported Prince installed a second ball mill and related equipment at an expenditure of $120,000. Kerr-McGee Chemical Corp. operated a synthetic rutile plant near Mobile with output shipped to its Hamilton, MS, plant for processing to titanium dioxide pigments. Ilmenite from Australia was used as feed; over 150,000 short tons was imported through the Port of Mobile.

[1]State Mineral Officer, Bureau of Mines, Tuscaloosa, AL.
[2]State geologist, Geological Survey of Alabama, Tuscaloosa, AL.

Table 6.—Principal producers

Commodity and company	Address	Type of activity	County
Aluminum (smelters):			
Revere Copper & Brass Inc	Box 191 Rome, NY 13440	Plant	Jackson.
Reynolds Metals Co	Reynolds Metals Bldg. Richmond, VA 23218	do	Colbert.
Bauxite:			
A. P. Green Refractories Co.,[1] a subsidiary of USG Corp.	Mexico, MO 65265	Mine and plant	Barbour.
Harbison-Walker Refractories Co. Inc.,[2] a division of Dresser Industries Inc.	Dale Rd. Route 1, Box 58 Eufaula, AL 36027	do	Barbour and Henry.
Mullite Co. of America	901 East 8th Ave. King of Prussia, PA 19406	Mines	Do.
Cement:			
Allied Products Co.[3]	Box 36130 Birmingham, AL 35236	Plants	Jefferson and Shelby.
Blue Circle Inc.[4]	Box 182 Calera, AL 35040	Plant	Shelby.
Citadel Cement Corp	2959 Paces Ferry Rd., Suite 7 Atlanta, GA 30339	do	Marengo.

See footnotes at end of table.

Table 6.—Principal producers —Continued

Commodity and company	Address	Type of activity	County
Cement —Continued			
Ideal Basic Industries Inc.[4]	950 17th St. Box 8789 Denver, CO 80201	Plants	Mobile.
Lehigh Portland Cement Co	Box 1882 718 Hamilton Mall Allentown, PA 18105	Plant	Jefferson.
National Cement Co. Inc	Box 7348 Mountain Brook Station Birmingham, AL 35223	do	St. Clair.
Clays:			
Bickerstaff Clay Products Co. Inc	Box 517 Bessemer, AL 35020	Mines	Jefferson and Russell.
Blue Circle Inc	Box 182 Calera, AL 35040	Mine	Shelby.
Jenkins Brick Co	Box 91 Montgomery, AL 37101	Mines	Chilton, Elmore, Montgomery.
Livlite Corp	Drawer V Livingston, AL 35470	Mine	Sumter.
Ferroalloys:			
Interlake Inc., Globe Metallurgical Div.	Box 348 Selma, AL 36701	Electric furnace	Dallas.
International Minerals & Chemical Corp., TAC Alloys Div.	Garner Rd. Bridgeport, AL 35740	do	Jackson.
Ohio Ferro-Alloys Corp	Box 68 Montgomery, AL 36057	do	Montgomery.
Reynolds Metals Co	Box 191 Sheffield, AL 35660	do	Colbert.
Lime:			
Allied Products Co	Box 268 Alabaster, AL 35007	Plant	Shelby.
Dravo Lime Co	One Gateway Center Seventh Floor Pittsburgh, PA 15222	do	Do.
Pig iron:			
Gulf States Steel Corp	174 South 26th St. Gadsden, AL 35901	Furnaces and mills.	Etowah and Jefferson.
USX Corp	Box 599 Fairfield, AL 35064	do	Jefferson.
Jim Walter Resources Inc	330 1st Ave., North Birmingham, AL 35202	Furnaces	Do.
Salt:			
Olin Corp	120 Long Ridge Rd. Stamford, CT 06904	Brine wells	Washington.
Sand and gravel (1986):			
Holland and Woodward Co. Inc	Box 1947 Decatur, AL 35601	Surface mine and plant.	Franklin.
R & S Materials Inc	Box 3547 Montgomery, AL 36109	do	Autauga, Elmore, Montgomery.
Southern Industries, Radcliff Materials.	Box 2068 Mobile, AL 36601	do	Mobile and Montgomery.
C. T. Thackston Sand & Gravel Inc.	Box 3211 Montgomery, AL 36109	do	Montgomery.
Stone:			
Allied Products Co	Box 628 Alabaster, AL 35007	Quarries	Jefferson and Shelby.
Dolcito Quarry Co	Box 6566 Birmingham, AL 35217	Quarry	Jefferson.
Ideal Basic Industries Inc	950 17th St. Box 8789 Denver, CO 80201	do	Monroe.
Southern Stone Co. Inc.[5]	Box C-200 Birmingham, AL 35283	Quarries	Jefferson, Lee, Shelby.
Vulcan Materials Co.[6]	Box 7324-A Birmingham, AL 35253	do	Calhoun, Colbert, Etowah, Franklin, Jackson, Jefferson, Madison, Morgan, Shelby.
Talc:			
Cyprus Industrial Minerals Co	Alpine, AL 35014	do	Talladega.

[1]Also kaolin.
[2]Also kaolin and synthetic mullite.
[3]Also lime.
[4]Also clays and stone.
[5]Also sand and gravel.
[6]Also clays and sand and gravel.

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